Abstract of the Disclosure

A method of producing an anti-reflection film includes forming a first layer on a transparent substrate, forming a second layer on the first layer, and forming the third layer on the second layer. When an optical admittance Y at a surface of the second layer is represented by,

$$Y = \frac{H}{E} = (x + iy)$$

where i is the imaginary number unit,

thicknesses and reflective indexes of the substrate, first layer, second layer, and third layer are selected so that x and y satisfy the following formula,

$$0.9 \times \{(n^2 - n_0^2)/2n_0\}^2 < \{x - (n^2 + n_0^2)/2n_0\}^2 + y^2 < 1.1 \times \{(n^2 - n_0^2)/2n_0\}^2$$

where n is a refractive index of the third layer and n_0 is a refractive index of an outer region at an outside of the anti-reflection film.